UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/698,736	10/31/2003	Jerry Z. Shan	200208138-1	3123

22879 7590 08/24/2009

HEWLETT-PACKARD COMPANY
Intellectual Property Administration
3404 E. Harmony Road
Mail Stop 35
FORT COLLINS, CO 80528

EXAMINER	
KUNDU, SUJOY K	

ART UNIT	PAPER NUMBER
2863	

NOTIFICATION DATE	DELIVERY MODE
08/24/2009	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

JERRY.SHORMA@HP.COM
ipa.mail@hp.com
jessica.l.fusek@hp.com

UNITED STATES PATENT AND TRADEMARK OFFICE

Commissioner for Patents
United States Patent and Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450
www.uspto.gov

BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 10/698,736
Filing Date: October 31, 2003
Appellant(s): SHAN ET AL.

Nathan E. Stacy
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed June 22, 2009 appealing from the Office action mailed January 21, 2009.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

US 2003/0009399 A1	**Boerner**	**1-2003**
5,734,592	**Cox et al.**	**3-1988**

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 1-14 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

With regards to Claim 1, The claims are directed to a judicial exception; as such, pursuant to the Interim Guidelines on Patent Eligible Subject Matter (MPEP 2106)), the claims must have either physical transformation and/or a useful, concrete and tangible result. The claims fail to include transformation from one physical state to another. Although, the claims appear useful and concrete, there does not appear to be a tangible result claimed. Merely determining a value for a sensitivity parameter using the plurality of sequences would not appear to be sufficient to constitute a tangible result, since the outcome of the determining a value for a sensitivity parameter using the plurality of sequences step has not been used in a disclosed practical application nor made available in such a manner that its usefulness in a disclosed practical application can be realized. As such, the subject matter of the claims is not patent eligible.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-12, 14-23, 25-30 are rejected under 35 U.S.C. 102(b) as being anticipated by Boerner et al. (US 2003/0009399).

With regards to Claim 1, 12, 15, 17, 22, 25, and 27 Boerner teaches a processor-based method comprising:

receiving a data stream comprising a plurality of temporally ordered data points (Figure 1, Paragraph 34);

generating a plurality of sequences from a first portion of the data stream (Figure 1, Paragraph 34-36); and

training a detector by determining a value for a sensitivity parameter using the plurality of sequences (Figure 1, Paragraph 18) .

With regards to Claim 3, 19, 26, Boerner teaches a method wherein running the detector comprises:

generating a score corresponding to the second portion of the data stream (Paragraph 39-40);

comparing the score to the determined value for the sensitivity parameter; and signaling detection (Paragraph 18).

With regards to Claim 2 and 16, Boerner teaches the method comprising running the detector on a second portion of the data stream (Paragraph 34-36).

With regards to Claim 4 and 18, Boerner teaches the method wherein training the detector by determining the value for the sensitivity parameter comprises selecting the

value for the sensitivity parameter based on a target level for an estimated performance characteristic of the detector (Figure 1, Paragraph 43).

With regards to Claim 5, Boerner teaches the method wherein training the detector by determining the value for the sensitivity parameter comprises:

generating a score for each of the plurality of sequences (Paragraph 39-40); and

selecting the value for the sensitivity parameter based on the scores (Paragraph 18).

With regards to Claim 6, Boerner teaches the method wherein generating the plurality of sequences comprises:

inferring a statistical distribution of a known type to characterize the first portion of the data stream (Paragraph 43); and

generating the plurality of sequences from the statistical distribution (Paragraph 43-45).

With regards to Claim 7, Boerner teaches the method wherein the statistical distribution is a discrete distribution containing data points from the first portion of the data stream, and wherein generating the plurality of sequences from the statistical distribution comprises selecting data points from the discrete distribution (Paragraph 43-45).

With regards to Claim 8, 28, Boerner teaches the method wherein inferring a known type of distribution comprises determining a set of parameters corresponding to the known type of statistical distribution (Paragraph 43-45).

With regards to Claim 9, Boerner teaches the method wherein generating the plurality of sequences comprises:

selecting a change based on a distribution of change (Paragraph 43-45); and

generating a changed sequence based on the selected change (Paragraph 43-45).

With regards to Claim 10, Boerner teaches the method wherein the value of the sensitivity parameter comprises determining a plurality of values for the sensitivity parameter using the plurality of sequences (Paragraph 18).

With regards to Claim 11, Boerner teaches the method wherein determining the value of the sensitivity parameter comprises calculating a transformation of a second of the plurality of values for the sensitivity parameter (Paragraph 18, 43-46).

With regards to Claims 14, 20-21, and 23, Boerner teaches the method comprising raising an alarm when a respective detector signals detection when parameterized by the respective sensitivity parameter and run on a second portion of a sufficient set of data streams (Paragraph 18, "indicator").

With regards to Claim 29, Boerner teaches system wherein for detecting comprises means for detecting an interesting event in a parameter of the plurality of distributions (Paragraph 43-46, 54 "trend").

With regards to Claim 30, Boerner teaches the system comprising means for injecting a change into the first portion of the data stream (Paragraph 34-36).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 13 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Boerner (US 2003/0009399) in view of Cox et al. (5,734,592).

Regarding claims 13 and 24, Boerner teaches all the limitations discussed above, however Boerner does not teach a method for determining the value for the sensitivity parameter comprises determining the value for the sensitivity parameter at lease partially on cost parameters.

Cox teaches a method for determining the value for the sensitivity parameter comprises determining the value for the sensitivity parameter at least partially on cost parameters (Claims, Column 11, Claim 2).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to include teaches a method for determining the value for the sensitivity parameter comprises determining the value for the sensitivity parameter at lease partially on cost parameters as taught by Cox into Boerner for the purpose of providing increase in operational time.

(10) Response to Argument

A. Ground of Rejection No. 1

Upon further review between, the Examiner and Conferees, the 35 U.S.C. 112, 2nd rejection has been withdrawn.

B. Ground of Rejection No. 2

The Appellants argue that the Examiner has failed to fully appreciate and consider all of the recited language of independent method claim 1, as well as the extensive disclosures in the specification. First, the useful and tangible result/application of "training a detector" by determining a value for a sensitivity parameter is presented clearly in the plain language of claim 1, as well in the specification. Second, the present specification teaches various exemplary applications utilizing a trained detector having a sensitivity parameter, and also teaches detailed embodiments of determining values for the recited sensitivity parameter and implementing associated testing. See, e.g., Application, page 6, line 1 - page 9, line 4; page 19, line 8 - page 23, line 4; page 24, line 12 - page 25, line 5; page 25, line 20 - page 27, line 24; page 36, line 11 - page 37, line 17; Figures 1-10.

Further, Appellants emphasize that the recited processor-based method of claim 1 (and its dependent claims 2-14) satisfies at least the patentability test clarified recently by the Federal Circuit. See In re Bilski at 943 (explaining that subject matter is patentable under 35 U.S.C. § 101 if "(1) it is tied to a particular machine or apparatus, or (2) it transforms a particular article into a different state or thing."). The Appellants respectfully submit that claim 1 satisfies both options of the Bilski test.

With regard to the first option, the method of independent claim 1 (and its dependent claims 2-14) is clearly tied a machine such as a processor (and a detector).

See, e.g., Application, page 16, lines 5-14. Indeed, the preamble of claim 1 limits the method to a processor-based method. See, e.g., Coming Glass Works v. Sumitomo Elec. U.S.A., Inc., 868 F.2d 1251, 1257, 9 USPQ2d 1962, 1966 (Fed. Cir. 1989); Pac-Tec Inc. v. Amerace Corp., 903 F.2d 796, 801, 14 USPQ2d 1871, 1876 (Fed. Cir. 1990) (determining that preamble language that constitutes a structural limitation is actually part of the claimed invention). In addition, the skilled artisan, in view of the present specification and the plain language of the body of the claims, would understand that the present method claims are tied to a processor (i.e., a machine or apparatus). To be sure, one of ordinary skill in the art would recognize that the method claims rely on a machine (e.g., a processor including a central processing unit, microprocessor, computer, server, programmable logic controller, chip, etc.) to implement the recited features of the method claims. With regard to the second option of the Bilski test, the recited detector, however integrated with the processor, is transformed to a different state or thing upon becoming trained, i.e., the detector becomes a trained programmed detector.

Examiner respectfully disagrees with appellant. Claim 1 is directed towards a processor-based method, the claim does not seem to be tied to a particular machine or transform a particular article (In re Bilski, F.3d (Fed. Cir. 2008) (en banc)).

As explained in the Interim Guidelines, the first step in determining whether a claim recites patent eligible subject matter is to determine whether the claim falls within one of the four statutory categories of invention recited in 35 USC 101: process, machine, manufacture, and composition of matter. The latter three categories define

"things" or "products," while a "process" consists of a series of steps or acts to be performed. For purposes of 35 USC 101, a "process" has been given a specialized, limited meaning by the courts.

Based on recent Federal Circuit decisions, a 35 USC 101 process must (1) be tied to another statutory class (such as a particular apparatus) or (2) transform underlying subject matter (such as an article or materials) to a different state of thing. If neither of these requirements is met by the claim, the method is not a patent eligible process under 35 USC 101, therefore claim 1 is directed towards nonstatutory subject matter.

C. Ground of Rejection No. 3

1. Deficiencies of All Independent Claims

Appellant argues that Boerner does not disclose generating a plurality of sequences from a first portion of data stream. Boerner discloses a technique for analyzing a plurality of "time series data sets" in order to identify a particular data set to be further analyzed. In particular, Boerner discloses that regression techniques may be applied to a time series data set (to the last 30 data points in the set) to calculate a slope of a fitted line (through the last 30 data points). Thereafter, based on the slope value calculated for each times series data set, a particular data set may be selected for further analysis. See id. For instance, Boerner teaches that time series data sets with large slope values are ideal candidates for further analysis.

Further more appellant argues, while claim limitations should not be imported from the specification, the claims must be interpreted both consistent with and in light of

the specification, as well consistent with the skilled artisan's interpretation, whether the claims are in an issued patent or are pending in a patent application. As appreciated by the skilled artisan, a time series data set as taught by Boerner is merely data points in successive order collected at intervals over a period of time, usually in uniform intervals. The time series data set is the data itself and not a sequence generated or modeled separate from the data. In contrast, as consistently held and explained throughout the present specification, the recited plurality of sequences (e.g., multiple statistical distributions) are generated (e.g., modeled) from a first portion of data and are distinct from the data. Such an understanding would be fully appreciated by those skilled in the art. Furthermore, it should be noted the last 30 data points of a Boerner data set, or the regression-fitted line or a slope of the line, does not lead to a plurality of generated sequences, as claimed. Boerner, as noted, simply calculates a slope for the last 30 data points based upon a fitted line determined by a regression technique. The Appellants respectfully submit that one skilled in the art would not reasonably view a regression-fitted line or a slope of that line as a "sequence." Under any reasonable interpretation of the Examiner' s limited analysis or of the Boerner reference, Boerner does not disclose generating a plurality of sequences from a first portion of a data stream, as generally recited in all of the present independent claims. Undeniably, the Boerner time series data sets do not read on the recited plurality of sequences.

Lastly, it should be noted that even if a time series data set could be broadly equated with a generated sequence, as claimed (which the Appellants do not concede), Boerner does not teach that its plurality of time series data sets originate from a first

portion of a data stream, or even from the same data stream. To be sure, such a disclosure is not inherent (i.e., necessarily present) in Boerner. The Examiner apparently ignored that the recited plurality of sequences are generated from a first portion of a single data stream.

Examiner respectfully disagrees with appellant. Boerner teaches generating a plurality of sequences from a first portion of data stream as shown in Paragraph 34. According to Boerner, "a plurality of time series data sets is analyzed in order to identify one or more data sets for further analysis..." Thus broadly interpreted, each data set would be interpreted as a plurality of sequences from a selected amount of data points, in this embodiment, would be 30 data points or 1.5 months worth of data. This step is repeated (See Paragraph 44) to set multiple trends, thus continuously monitoring the data. The first portion of a data stream is relative to where one would start his/her analysis. Thus Boerner teaches, "generating a plurality of sequences from a first portion of data stream."

Furthermore, the appellant concludes that the Examiner apparently ignored that the recited plurality of sequences are generated from a first portion of a single data stream. Examiner respectfully disagrees with appellant as, "a plurality of sequences from a first portion of data stream." Appellant does not claim a single data stream. Although it may be obvious, no such language is in the claim. Secondly, broadly interpreted, each data set would be interpreted as a plurality of sequences from a selected amount of data points, in this embodiment, would be 30 data points or 1.5 months worth of data. This step is repeated (See Paragraph 44) to set multiple trends,

thus continuously monitoring the data. The first portion of a data stream is relative to where one would start his/her analysis. One in the ordinary skill in the art would not believe that someone interested in trend data would pick data not pertinent in another stream for analysis. One would analyze the same continuous data for accurate trends. Thus Boerner teaches, "generating a plurality of sequences from a first portion of data stream."

2. Deficiencies in Independent Claims 1, 22, 25, 27

Appellant argues that Boerner also fails to teach or suggest this feature. In setting forth the present rejection, the Examiner cited Figure 1 and paragraph 18 of Boerner as disclosing the determination of a sensitivity parameter based upon a plurality of sequences generated from a first portion of a data stream. After reviewing this passage, it appears that the Examiner may have intended for the disclosed "thresholds" to constitute the recited "sensitivity parameters." However, even if such a correlation is proper, the Appellants submit that the present claims not only require the determination of a "sensitivity parameter," but also require that the sensitivity parameter is determined using the plurality of sequences as discussed above. With this in mind, the Appellants are unable to locate any teaching in the cited passage or elsewhere that the "thresholds" are determined based on a plurality of sequences, as recited by claims 1, 15, 22, and 27. Indeed, the Appellants note that this single cited passage is provided in the "Summary of the Invention" section of Boerner and is the only passage in the reference which even mentions the use of thresholds. Further, as discussed above, any reasonable interpretation of Boerner does not teach the generation of a plurality of

sequences using a first portion of a data stream, as recited by the independent claims. Thus, the Appellants are unable to ascertain as to how the Examiner has interpreted the reference to conclude that the "thresholds" briefly mentioned in paragraph 18 are generated from a plurality of sequences.

Moreover, as noted, the Examiner further cited Figure 1 of Boerner in support of the rejection. However, based on the Examiner's failure to provide any sort of explanation in the Final Office Action, it is unclear as to what precise elements in Figure 1 the Examiner believes discloses sensitivity parameters. After reviewing the cited figure, the Appellants note that Figure 1 appears to mention the use of "trend determination parameters." However, after reviewing the reference, it does not appear that the disclosed trend determination parameters are derived or determined from a plurality of sequences generated from a first portion of a data stream. As discussed, the passages cited by the Examiner in the present rejection fail to even disclose the generation of a plurality of sequences. Boerner can reasonably be interpreted as teaching the determination of sensitivity parameters using a plurality of sequences generated from a first portion of a data stream, as recited by independent claims 1, 22, 25, and 27.

Examiner respectfully disagrees with appellant as Boerner does teach determining sensitivity parameter using the plurality of sequences. The Examiner has interpreted the reference to conclude that the "thresholds" briefly mentioned in paragraph 18 are generated from a plurality of sequences. As discussed above, each data set would be interpreted as a plurality of sequences from a selected amount of

data points, in this embodiment, would be 30 data points or 1.5 months worth of data. This step is repeated (See Paragraph 44) to set multiple trends, thus continuously monitoring the data. In order to create process dynamic trends, one ordinary skill in the art would be able to determine that a plurality of sequences would have to be analyzed to create a threshold. Although the word, "threshold" is not necessarily used, determining a threshold is certainly suggested in Paragraphs 70-71, 74-77.

3. Deficiencies in Independent Claim 15 and dependent Claim 2

Appellants argue and find no mention or indication of testing a second portion of a data stream with a trained detector. Moreover, the Appellants respectfully submit that Boerner cannot be reasonably construed as disclosing the testing of a second portion of a data stream (or of the above-discussed Boerner time series data sets) using a trained detector. Boerner is devoid of this feature.

Examiner respectfully disagrees with appellant as Boerner teaches testing a second portion of a data stream with a trained detector. Although, Boerner does not specifically use the language of a testing a second portion of a data stream with a trained detector, it would be obvious to one ordinary skill in the art that since 30 data points or 1.5 months are sequenced the second portion of the data stream would be in the next 30 points or 1.5 months of data (See Paragraph 34). This would allow the user to follow trends in making decisions (See Paragraphs 44-45).

D. Ground of Rejection No. 4

Appellant argues that Cox relates to a computer-implemented process for determining a ranked set of solutions to a bipartite graph matching problem. The

Examiner relied on Cox solely for the teaching that cost variables may be used in determining sensitivity parameters. However, Cox, whether taken alone or in any sort hypothetical combination with Boerner, does not remedy the deficiencies of Boerner discussed above with regard to the third ground of rejection.

Examiner's respectfully disagrees with appellant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, Cox teaches that cost variables may be used in determining sensitivity parameters (Column 1, Lines 5-10). In this case, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include teaches a method for determining the value for the sensitivity parameter comprises determining the value for the sensitivity parameter at lease partially on cost parameters as taught by Cox into Boerner for the purpose of providing increase in operational time.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/Sujoy K Kundu/
Examiner, Art Unit 2863

Drew A. Dunn
/Drew A. Dunn/
Supervisory Patent Examiner, Art Unit 2863

Conferees:

Drew A. Dunn
/D. A. D./
Supervisory Patent Examiner, Art Unit 2863

Ricky Mack
/R. L. M./
Supervisory Patent Examiner, Art Unit 2873